

In the Claims:

1. (Currently amended) A guide device ~~(3)~~ for an off-shore drilling installation comprising at least one drilling riser ~~(2)~~ extending from a floating support ~~(1)~~ to said guide device ~~(3)~~ on the sea bottom ~~(4)~~, said drilling being performable from said floating support using a drill string ~~(38)~~ fitted at its end with drilling tools ~~(36)~~ passing through said drilling riser ~~(2)~~ and said guide device ~~(3)~~, said guide device ~~(3)~~ being characterized in that it comprises a telescopic guide pipe ~~(3)~~ comprising coaxial telescopic guide elements ~~(3a, 3b, 3e)~~ about an axis XX' and of decreasing diameters, the elements being pre-assembled one in another in such a manner that said telescopic pipe elements are suitable for sliding in the direction of said axis XX' one inside another, the smallest diameter, innermost telescopic pipe element ~~(3e)~~ being fitted at its end with breakup means ~~(35)~~ for breaking up the ground suitable for enabling said telescopic guide pipe ~~(3)~~ to be progressively buried in the ground by sliding said telescopic pipe elements ~~(3a, 3b, 3e)~~ outwards, thereby enabling a drilling tool ~~(36)~~ at the end of said drill string ~~(38)~~ to be guided more deeply in the ground.

2. (Currently amended) A guide device according to claim 1, characterized in that said smallest-diameter innermost pipe element ~~(3e)~~ presents a diameter substantially equal to the diameter of said drilling riser ~~(2)~~.

3. (Currently amended) A guide device according to claim 1 ~~or claim 2~~, characterized in that said means ~~(35)~~ for breaking up the ground are constituted by a multiply-perforated capsule enabling water or mud to be jetted into the ground by being injected under very high pressure.
4. (Currently amended) A guide device according to ~~any one of claims 1 to 3~~, characterized in that it has at least three coaxial telescopic pipe elements ~~(3a, 3b, 3c)~~.
5. (Currently amended) A device according to ~~any one of claims 1 to 4~~, characterized in that each of said telescopic coaxial pipe elements ~~(3a, 3b, 3c)~~ presents a length of 50 m to 300 m, preferably of 100 m to 200 m, said deployed guide pipe presenting a length of 150 m to 600 m, and preferably of 200 m to 300 m.
6. (Currently amended) A guide device ~~(3)~~ according to ~~any one of claims 1 to 5~~, characterized in that it comprises a said telescopic guide pipe ~~(3)~~ suitable for use in an off-shore drilling installation, in which at least one drilling riser ~~(2)~~ extends from a floating support ~~(1)~~ to a said guide device ~~(3)~~ at the sea bottom ~~(4)~~, said drilling riser ~~(2)~~ deflecting progressively from a substantially vertical position ~~(2a)~~ at said floating support ~~(1)~~ to a position that is substantially horizontal or tangential to the horizontal ~~(2b)~~ at the sea bottom ~~(4)~~, said drilling being performable from said floating support via said drilling riser ~~(2)~~ and said guide device ~~(3)~~ in such a manner that the borehole in the sea bottom is begun at a given angle of inclination relative to the horizontal that preferably lies in the range 5° to 60°, and more preferably in the

range 25° to 45°, said guide device ~~(3)~~ being characterized in that it comprises a said telescopic guide pipe ~~(3)~~ in a buried position ~~(A2)~~ in which said telescopic guide pipe ~~(3)~~ in the retracted position or the outer telescopic pipe element ~~(3a)~~ when said telescopic pipe ~~(3)~~ is deployed, comprises in succession:

- a front end ~~(3<sub>1</sub>)~~ resting substantially horizontally on the sea bottom;
- a curved intermediate portion ~~(3<sub>2</sub>)~~ buried in the subsoil of the sea bottom with a large radius of curvature ~~(R)~~, preferably a radius of curvature greater than 500 m; and
- a rear portion ~~(3<sub>3</sub>)~~ that is substantially linear and buried in the subsoil of the sea bed at said given angle of inclination ;

said telescopic guide pipe ~~(3)~~ or said outer telescopic element ~~(3a)~~ co-operating with controlled burying means ~~(3<sub>4</sub>, 5<sub>1</sub>-5<sub>3</sub>, 7<sub>1</sub>-7<sub>3</sub>, 8-9, 13)~~ enabling said retracted telescopic guide pipe ~~(3)~~ to be buried in the sea bottom while said retracted telescopic guide pipe ~~(3)~~ is being towed ~~(T)~~ along the sea bottom from its front end ~~(3<sub>1</sub>)~~, starting from an initial position ~~(A1)~~ in which said retracted telescopic guide pipe ~~(3)~~ rests entirely on the sea bottom in a substantially horizontal position, to a said buried position ~~(A2)~~ in the subsoil of the sea bottom.

7. (Currently amended) A guide device according to claim 6, characterized in that said retracted telescopic guide pipe ~~(3)~~ presents a length of 100 m to 600 m, preferably of 250 m to 450 m, with a said given angle of inclination of the guide pipe lying in the range about 10° to 60°, and preferably in the range 25° to 45°.

8. (Currently amended) A guide device according to claim ~~6 or claim 7~~, characterized in that said front end (3<sub>1</sub>) is engaged in a baseplate (6) including a load and resting on a front soleplate (5<sub>1</sub>) such that said baseplate (6) maintains said front end (3<sub>1</sub>) substantially horizontally on the sea bottom while it is being towed (T).

9. (Currently amended) A guide device according to ~~any one of claims 6 to 8~~, characterized in that said controlled burying means comprise:

- a front soleplate (5<sub>1</sub>) placed on the sea bottom and supporting said front end (3<sub>1</sub>) and secured thereto;

- at least one intermediate soleplate (5<sub>2</sub>, 5<sub>3</sub>) supporting said curved intermediate portion (3<sub>2</sub>) and/or the rear portion (3<sub>3</sub>) and secured thereto, of surface area that is smaller than that of said front soleplate (5<sub>1</sub>), preferably a plurality of said intermediate soleplates (5<sub>2</sub>, 5<sub>3</sub>) distributed along said intermediate portion (3<sub>2</sub>) and said rear portion (3<sub>3</sub>) of surface area that becomes smaller relative to said front soleplate on approaching said rear end (3<sub>3</sub>); and

- an anchor (13) connected (12) to said rear portion (3<sub>3</sub>) and suitable for becoming buried in the ground under the effect of said traction applied to said front end (3<sub>1</sub>).

10. (Currently amended) A guide device according to ~~any one of claims 6 to 9~~, characterized in that said controlled burying means comprise at least one deflector (7<sub>1</sub>, 7<sub>2</sub>, 7<sub>3</sub>) secured to

said outer telescopic pipe element ~~(3a)~~ of said telescopic guide pipe ~~(3)~~ in said intermediate portion ~~(32)~~ or said rear portion ~~(33)~~ of said retracted telescopic guide pipe, comprising plane surfaces that are preferably symmetrical about a vertical axial plane ~~(XX', YY')~~ of said guide pipe in the longitudinal direction when it is in a rectilinear horizontal position, and said plane and deflector surfaces being inclined relative to a horizontal axial plane ~~(XX', ZZ')~~ of said guide pipe when it is in a horizontal position on the sea bottom, said deflector ~~(71, 72, 73)~~ being inclined at an angle ~~(1, 2, 3)~~ in such a manner as to cause said retracted telescopic guide pipe ~~(3)~~ to become buried when it is towed from said substantially horizontal initial position ~~(A1)~~ to a said buried position ~~(A2)~~ in the sea bottom.

11. (Currently amended) A guide device according to claim 10, characterized in that it has a plurality of deflectors ~~(71, 72, 73)~~ distributed along the outer telescopic pipe element ~~(3a)~~ of said telescopic guide pipe, said deflectors being inclined at respective angles ~~(1, 2, 3)~~ that become smaller for said deflectors ~~(71, 72, 73)~~ that are closer to said front end ~~(31)~~.

12. (Currently amended) A guide device according to ~~any one of claims 1 to 11~~, characterized in that said controlled burying means comprise:

- secondary pipes ~~(8)~~ for jetting fluid ~~(18)~~ and secured to said telescopic guide pipe ~~(3)~~, extending parallel thereto along the underface thereof; and

- said secondary pipes (8) being of smaller diameter than said telescopic guide pipe (3) and having perforations (9) in their underfaces enabling a fluid (18) to be expelled towards the sea bottom when said secondary pipes (8) are fed by a said fluid (18) under pressure.

13. (Currently amended) A guide device according to claim 12, characterized in that said secondary pipes (8) are connected via their ends (8<sub>1</sub>, 8<sub>2</sub>) to the front and rear ends (3<sub>1</sub>, 3<sub>3</sub>) of said retracted telescopic guide pipe (3), communicating with said front and rear ends (3<sub>1</sub>, 3<sub>3</sub>) in such a manner as to make it possible to feed them using a single feed pipe (19) connected to said front end (3<sub>1</sub>) of said guide pipe (3).

14. (Currently amended) A device according to ~~any one of claims 1 to 13~~, characterized in that the guide device comprises:

- a rigid outer top structure (20) covering and holding rectilinear said retracted telescopic guide pipe (3) when it is substantially horizontal and rests on the sea bottom;

- said outer structure (20) presenting a longitudinal central opening in its bottom face enabling said retracted telescopic guide pipe (3) to become buried in the ground when it is towed (T);

- at least one connection (17<sub>1</sub>, 17<sub>2</sub>, 17<sub>3</sub>) connecting at least the rear portion (3<sub>3</sub>) of the outer telescopic pipe element (3a) of the telescopic guide pipe (3) to said outer structure (20) in

such a manner as to prevent it from becoming buried beyond a given depth so as to limit the radius of curvature (~~R~~) of said curved portion;

- said outer top structure (~~20~~) resting on the ground of the sea bottom (~~4~~), preferably via lateral soleplates (~~21~~) situated on either said longitudinal central opening (~~22~~), said lateral soleplates (~~21~~) preventing said rigid outer structure (~~20~~) from becoming buried; and

- said outer structure (~~20~~) being secured to said baseplate (~~6~~) in which said front portion (~~3<sub>1</sub>~~) of the guide pipe (~~3~~) is engaged.

15. (Currently amended) A guide device according to claim 14, characterized in that it has a plurality of flexible connections (~~17<sub>1</sub>, 17<sub>2</sub>, 17<sub>3</sub>~~) distributed along the outer telescopic pipe element (~~3<sub>a</sub>~~) of said telescopic guide pipe (~~3~~) and presenting lengths that become longer for connections that are closer to the rear end (~~3<sub>3</sub>~~) of the guide pipe (~~3~~) and of lengths that are such that said guide pipe presents a said curved portion having a desired radius of curvature (~~R~~) and a said rear portion (~~3<sub>3</sub>~~) that is linear.

16. (Currently amended) A method of making a guide device according to claims 6 to 15, characterized in that the following steps are performed:

- placing a said telescopic guide pipe in the retracted position (~~3~~) in a said initial position (~~A1~~) where it rests substantially horizontally and in rectilinear manner on the sea

bottom, said telescopic guide pipe (3) co-operating with said controlled burying means (~~34, 51, 53, 71, 73, 89, 13~~); and

- towing (~~T~~) the front end (~~31~~) of said telescopic guide pipe (3) in the retracted position along the sea bottom, preferably in the axial longitudinal direction ~~XX'~~ of said guide pipe, from said initial position (~~A1~~) to a said buried position (~~A2~~).

17. (Currently amended) A method of making a guide device according to claim 16, characterized in that guide devices according to claim 8 or claim 9 are used and the front end (~~31~~) of said retracted telescopic guide pipe (3) is towed (~~T~~) until said intermediate soleplates (~~52, 53~~) are buried in the ground at increasing depth on coming closer to the rear end (~~33~~) of the guide pipe so as to obtain the desired radius of curvature (~~R~~), preferably greater than 500 m, and more preferably lying in the range 500 m to 1000 m.

18. (Currently amended) A method of making a guide device according to claim 16 ~~or claim 17~~, characterized in that a guide device according to claim 10 or claim 11 is used and the front end (~~31~~) of said retracted telescopic guide pipe (3) is towed (~~T~~) until said deflectors (~~71, 72, 73~~) are buried in the ground in a horizontal position so as to obtain a said desired radius of curvature preferably greater than 500 m, and more preferably lying in the range 500 m to 1000 m.

19. (Currently amended) A method of making a guide device according to ~~any one of claims 16 to 18~~, characterized in that a guide device is used according to claim 12 or claim 13, and:

- injecting gas under pressure into said secondary pipes ~~(8)~~ when it is desired to tow said guide pipe ~~(3)~~ on the sea bottom; and

- injecting a liquid under pressure, preferably water, into said secondary pipes ~~(8)~~ and preferably into said telescopic guide pipes ~~(3)~~ closed at both ends ~~(3<sub>1</sub>, 3<sub>2</sub>)~~ and communicating with said ends ~~(8<sub>1</sub>, 8<sub>2</sub>)~~ of said secondary pipes ~~(8)~~ when it is desired to bury said guide pipe ~~(3)~~.

20. (Currently amended) A method of making a guide device according to ~~any one of claims 16 to 19~~, characterized in that a guide device is used according to claim 14 or claim 15, and the front end ~~(3<sub>1</sub>)~~ of said retracted telescopic guide pipe ~~(3)~~ and said rigid outer structure ~~(20)~~ secured to said guide pipe are towed ~~(T)~~ until said connection(s) ~~(17<sub>1</sub>-17<sub>3</sub>)~~ prevent at least said rear portion ~~(3<sub>3</sub>)~~ of said retracted telescopic guide pipe ~~(3)~~ from becoming buried deeper so as to obtain the desired radius of curvature ~~(R)~~ preferably greater than 500 m, and more preferably lying in the range 500 m to 1000 m.

21. (Currently amended) An off-shore drilling installation comprising a drilling riser ~~(2)~~ extending from a floating support to a said guide device ~~(3)~~ according to ~~any one of claims 1 to 15~~, to which said drilling riser ~~(2)~~ is connected.

22. (Currently amended) An off-shore drilling installation according to claim 21, comprising a drilling riser ~~(2)~~ extending from a floating support ~~(1)~~ to a guide device ~~(3)~~ according to any one of claims 6 to 5, to which said drilling riser is connected, said drilling riser ~~(2)~~ deflecting progressively from a substantially vertical position ~~(2a)~~ at said floating support ~~(1)~~ to a position that is substantially horizontal or tangential to the horizontal ~~(2b)~~ at the sea bottom, drilling being performable from said floating support ~~(1)~~ via said drilling riser ~~(2)~~ and said guide device ~~(3)~~ in such a manner that a borehole begins in the sea bottom at a given angle of inclination relative to the horizontal, preferably lying in the range 10° to 80°.

23. (Currently amended) A method of making a drilling installation according to claim 21 ~~or claim 22~~, characterized in that the following steps are performed:

- making a guide device according to a method according to any one of claims 16 to 20;
- and
- connecting at least one said drilling riser ~~(2)~~ to said front end ~~(3<sub>1</sub>)~~ of the guide pipe resting on the sea bottom ~~(4)~~.

24. (Currently amended) A method of drilling using a drilling installation according to claim 21 ~~or claim 22~~, characterized in that drilling operations are performed and a borehole is constructed by deploying drill strings co-operating with drilling tools and columns of tubing via a said drilling riser ~~(2)~~ and a said guide device ~~(3)~~ buried in the sea bottom ~~(4)~~.